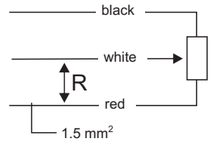
Connection of potentiometer (optional)

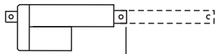
LA1 ☒
LA5 ☐
LA10 ☐
LA14 ☐
LA24 ☐
FA14 ☐
IA14 ☐



0 Ω between white and red when fully retracted.

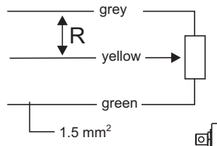
Stroke	R
1 – 2"	940 Ω/cm
3 – 4"	470 Ω/cm
5 – 6"	315 Ω/cm

POTENTIOMETER DATA	
Max. power:	1.5 W
Resistance tolerance:	± 5 %
Resistance linearity:	± 0.25 %



min. stroke = 0 Ω → Ω = R × cm

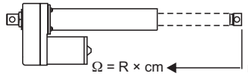
LA1 ☐
LA5 ☒
LA10 ☒
LA14 ☒
LA24 ☒
FA14 ☒
IA14 ☐



0 Ω between yellow and grey when fully extended.

Stroke	R
0 – 10"	390 Ω/cm
11 – 20"	200 Ω/cm
21 – 40"	100 Ω/cm

POTENTIOMETER DATA	
Max. power:	2 W
Resistance tolerance:	± 5 %
Resistance linearity:	± 0.25 %

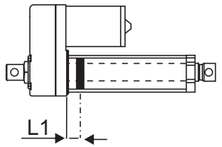


Ω = R × cm ← max. stroke = 0 Ω

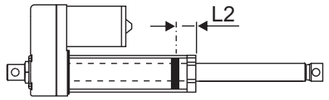
Position of magnet for reed switch sensors

LA1 ☐
LA5 ☐
LA10 ☐
LA14 ☒
LA24 ☒
FA14 ☒
IA14 ☒

Magnet position with extension tube fully retracted



Magnet position with extension tube fully extended



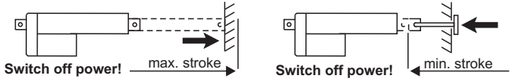
Actuator type	Actuator designation	L1 (mm)	L2 (mm)
LA14, LA24, FA14	xAxx-xxAxx	32	35
LA14, LA24, FA14, IA14	xAxx-xxBxx	92	20

The reed switch sensors should normally be placed about 25 mm before these position in order to compensate for the distance needed for deceleration.

LA1 with integrated end stroke limit switches

LA1 ☒
LA5 ☐
LA10 ☐
LA14 ☐
LA24 ☐
FA14 ☐
IA14 ☐

If using a LA1 actuator with integrated end stroke limit switches (designation Sxx-xxAxx-xxxx), make sure to switch off the power to the motor if the extension tube can not extend or retract fully. Otherwise the motor will keep running which may cause damage to the actuator.



CAUTION!

Always turn power off before working on the actuator or the wiring.

Technical data

	LA1	LA5	LA10	LA14	LA24	FA14	IA14
DC-motor with automatic reset thermal switch *							
12 VDC (10 – 16 V)	yes	–	yes	yes	–	–	–
24 VDC (20 – 32 V)	yes	–	yes	yes	–	–	–
36 VDC (30 – 40 V)	yes	–	yes	yes	–	–	–
Only accepts battery or full wave smoothed rectified voltage	yes	–	–	–	–	–	–
Accepts battery, full wave smoothed or unsmoothed rectified voltage	–	yes	yes	yes	–	–	–
AC-motor with automatic reset thermal switch *							
1∼115 VAC (102 – 130 V)	–	yes	–	–	yes	–	–
1∼230 VAC (212 – 240 V)	–	yes	–	–	yes	–	–
3∼400 VAC (360 – 420 V)	–	–	–	–	yes	–	–
Capacitor necessary	–	yes	–	–	yes	–	–
Max. current (A)	see actuator label					–	–
Duty cycle @ full load 25°C (%)	25	25	25	25	25	–	–
Max. on time (s)	**	45	**	**	45	–	–
Restraining torque (Nm)	2.3	11.3	11.3	0	0	0	0
End play max. (mm)	0.9	1	1	1	1	1	1
Ambient temperature (°C)	- 25 – + 65						
Lubrication	for life						
Anti backdriving mechanism	yes						
Slip clutch	–	yes (set to 1.2 – 1.5 × max. dynamic load					–
Protection class	IP65	–	IP65	IP65	–	–	–
End stroke limit switches	yes	–	–	–	–	–	–
Options							
Feedback potentiometer	yes						–
Electrically released brake	–	yes	–	–	yes	–	–
Reed switch sensors	–	–	–	yes			
Pins	yes						
Pin holders	–	–	–	yes			
Trunnion	–	–	–	yes			
Trunnion holders	–	–	–	yes			

* Do not use the thermal switch as oveload protection ** One full cycle at full load

Reed switch sensor data	
Max. power (VA)	10
Max. current (A)	0.5
Max. voltage (VDC)	100
Protection class	IP 67
Part numbers	normally open D535 070 / normally closed D535 071

We recommend to always install fuse or thermal breaker between motor and power supply to protect actuator, wiring and other items.

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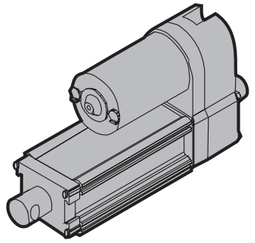
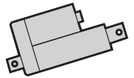
Installation manual for LA1, LA5, LA10, LA14, LA24, FA14 and IA14 actuators

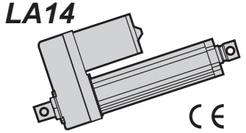


LA1



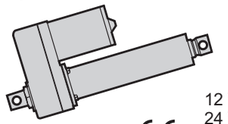
12 VDC
24 VDC
36 VDC

LA14



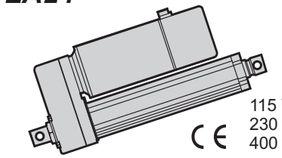
12 VDC
24 VDC
36 VDC

LA10



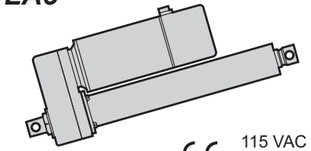
12 VDC
24 VDC
36 VDC

LA24



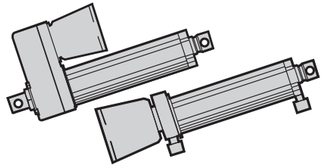
115 VAC
230 VAC
400 VAC

LA5



115 VAC
230 VAC

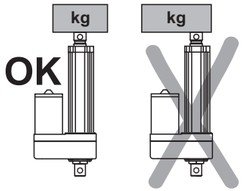
FA14, IA14



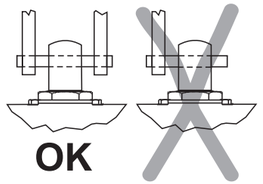
Solutions by DANAHER MOTION

Basic mounting rules

LA1 ☒ LA5 ☒ LA10 ☒ LA14 ☒ LA24 ☒ FA14 ☒ IA14 ☒

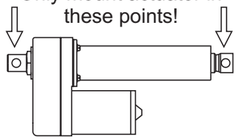


LA1 ☒ LA5 ☒ LA10 ☒ LA14 ☒ LA24 ☒ FA14 ☒ IA14 ☒



LA1 ☒ LA5 ☒ LA10 ☒ LA14 ☐ LA24 ☐ FA14 ☐ IA14 ☐

Only mount actuator in these points!

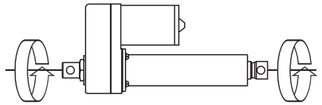


LA1 ☒ LA5 ☒ LA10 ☒ LA14 ☐ LA24 ☐ FA14 ☐ IA14 ☐

Restraining torque

Torque needed to prevent extension tube from rotating.

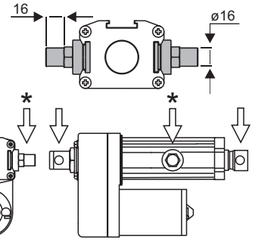
LA1	2.3 Nm
LA5	11.3 Nm
LA10	11.3 Nm



LA1 ☐ LA5 ☐ LA10 ☐ LA14 ☒ LA24 ☒ FA14 ☒ IA14 ☐

Only mount actuator in these points!

* Trunnion (option), p/no. D603 022 (2×)
Correct tightening torque = 4.4 Nm.

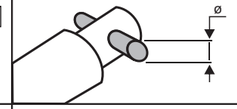


LA1 ☒ LA5 ☒ LA10 ☒ LA14 ☒ LA24 ☒ FA14 ☒ IA14 ☒

Only use solid pins!

LA 1 ø = 6.35 mm p/no. D603 034 (2×)	**LA5, LA10** ø = 12.7 mm p/no. D603 028 (2×)

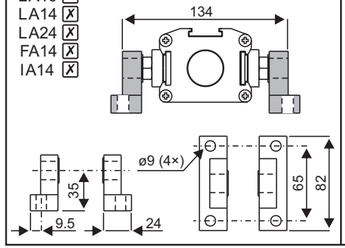
LA14,LA24, FA14, IA14
ø = 12 mm
p/no. D603 023 (2×)



LA1 ☐ LA5 ☐ LA10 ☐ LA14 ☒ LA24 ☒ FA14 ☐ IA14 ☐

Trunnion holders (option)

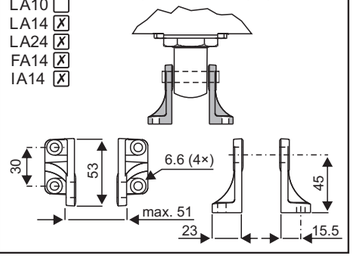
p/no. D603 030 (2×)



LA1 ☐ LA5 ☐ LA10 ☐ LA14 ☒ LA24 ☒ FA14 ☒ IA14 ☒

Pin holders (option)

p/no. D603 029 (2×)

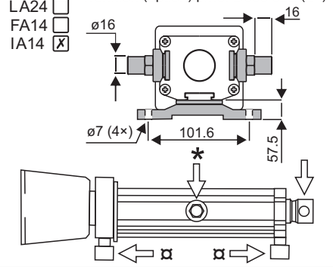


Basic mounting rules

LA1 ☐ LA5 ☐ LA10 ☐ LA14 ☐ LA24 ☐ FA14 ☐ IA14 ☒

Only mount actuator in these points!

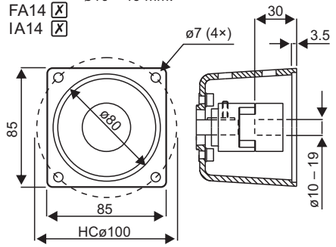
¤ Foot mount (standard)
* Trunnion (option) p/no: D603 022 (2×)



LA1 ☐ LA5 ☐ LA10 ☐ LA14 ☐ LA24 ☐ FA14 ☒ IA14 ☒

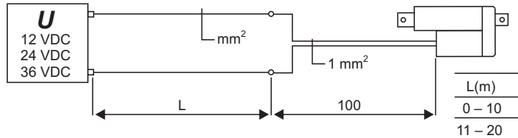
Motor flange

Drill hole and make key way in the coupling to fit your motor shaft. The coupling accepts holes between ø10 – 19 mm.



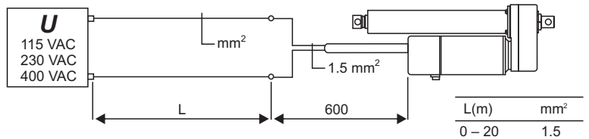
Wire cross section

LA1 ☒ LA5 ☐ LA10 ☐ LA14 ☐ LA24 ☐ FA14 ☐ IA14 ☐



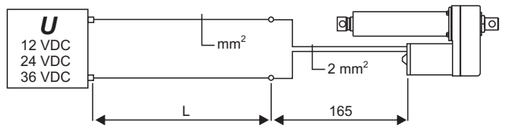
L(m)	mm²
0 – 10	1.5
11 – 20	2.5

LA1 ☐ LA5 ☒ LA10 ☐ LA14 ☐ LA24 ☒ FA14 ☐ IA14 ☐



L(m)	mm²
0 – 20	1.5

LA1 ☐ LA5 ☐ LA10 ☒ LA14 ☒ LA24 ☐ FA14 ☐ IA14 ☐



12 VDC			
Current	mm²		
(A)	L = 3 m	L = 6 m	L = 10 m
0 – 15	1.5	2.5	4
16 – 20	2.5	4	6
21 – 28	4	6	10
29 – 34	6	6	10

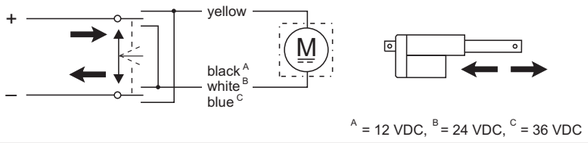
24 VDC		
Current	mm²	
(A)	L = 6 m	L = 10 m
0 – 10	1.5	1.5
11 – 15	2.5	2.5

36 VDC	
Current	mm²
(A)	L = 10 m
0 – 12	1.5

The tables are based on ambient temperature = 30°C or less.

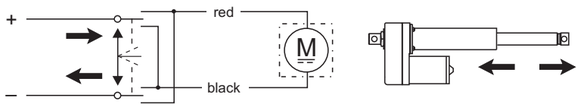
Connection of motor

LA1 ☒ LA5 ☐ LA10 ☐ LA14 ☐ LA24 ☐ FA14 ☐ IA14 ☐



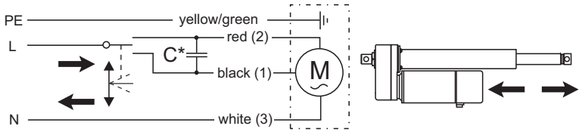
A = 12 VDC, B = 24 VDC, C = 36 VDC

LA1 ☐ LA5 ☐ LA10 ☒ LA14 ☒ LA24 ☐ FA14 ☐ IA14 ☐

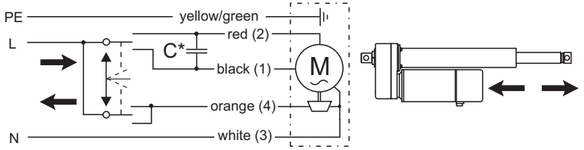


LA1 ☐ LA5 ☒ LA10 ☐ LA14 ☐ LA24 ☒ FA14 ☐ IA14 ☐

230 and 115 Vac supply without brake (A22-xxxx-xxxxNxxxx, AA22-xxxxxMxxxxNxxxx)

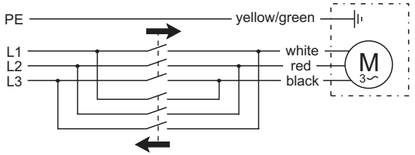
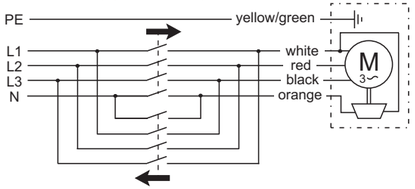


230 and 115 Vac supply with brake (A22-xxxx-xxxxBxxxx, AA22-xxxxxMxxxxBxxxx)



* Capacitor: 115 VAC = 35 μF, p/no. D900-448-002 / 230 VAC = 10 μF, p/no. D900-448-003

3 x 400 Vac supply without brake (A42-xxxxxMxxxxNxxxx, AA42-xxxxxMxxxxNxxxx)



3 x 400 Vac supply with brake (A42-xxxxxMxxxxBxxxx, AA42-xxxxxMxxxxBxxxx)